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Notice of Oral *Ex Parte* Presentation

March 29, 2005

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

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Federal Communications Commission
Office of Secretary

Re: In the Matter of
Unlicensed Operation in the TV Broadcast Bands, ET Docket No. 04-186; and
Additional Spectrum for Unlicensed Devices Below 900 MHz and the 3 GHz
Band, ET Docket No. 02-380.

Dear Ms. Dortch:.

On March 28, 2005, Jeffrey Schiffer, Alan Waltho, Michael Chartier, and Marjorie Dickman of Intel met with Julius Knapp, Bruce Franca, James Schlichting, and Alan Stilwell of the Office of Engineering and Technology regarding the above proceedings.

In the course of this meeting, Intel advocated allowing unlicensed wireless devices to operate on unused frequencies in the TV broadcast spectrum. Intel presented slides on vacant TV channel availability; TV channel detection/sensing; TV reception; wireless microphone operation; and headend/translator operation (slides attached).

Specifically, Intel stated that there is significant "white space" in the TV bands; effective vacant TV channel detection/sensing has been demonstrated; harmful interference to TV reception is not an issue (because direct pickup interference, cable ingress, and out-of-band emissions are not realistic concerns); the vast majority of wireless microphones operate on an unlicensed basis and thus are not entitled to secondary protected status; and harmful interference to headend/translator operation within the Grade B contour (where such protection is necessary) is not an issue. Intel also asserted that "fixed/access" and "personal/portable" devices should be dealt with in one item.

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Pursuant to Section 1.1206 of the Commission's Rules, 47 C.F.R. § 1.1206, a copy of this letter is being provided to each of the abovementioned parties. Please contact the undersigned with any questions in connection with this filing.

Respectfully submitted,

/s/ Marjorie J. Dickman

Marjorie J. Dickman
Senior Attorney, Government Affairs
Intel Corporation

Att: "OET/Intel Meeting," Unlicensed Operation in the TV Broadcast Bands, ET
Docket Nos. 04-186, 02-380, March 28, 2005.

cc: Julius Knapp, Deputy Chief, OET
Bruce Franca, Deputy Chief, OET
James Schlichting, Deputy Chief, OET
Alan Stilwell, Senior Associate Chief (Policy), OET

OET/Intel Meeting

Unlicensed Operation
in the TV Broadcast Bands

ET Docket Nos. 04-186, 02-380

March 28, 2005

Outline

- Overview/Intel Position
- Discussion Items
 - Vacant TV Channel Detection/Sensing
 - TV Reception
 - Wireless Microphone Operation
 - Headend/Translator Operation
- Next Steps

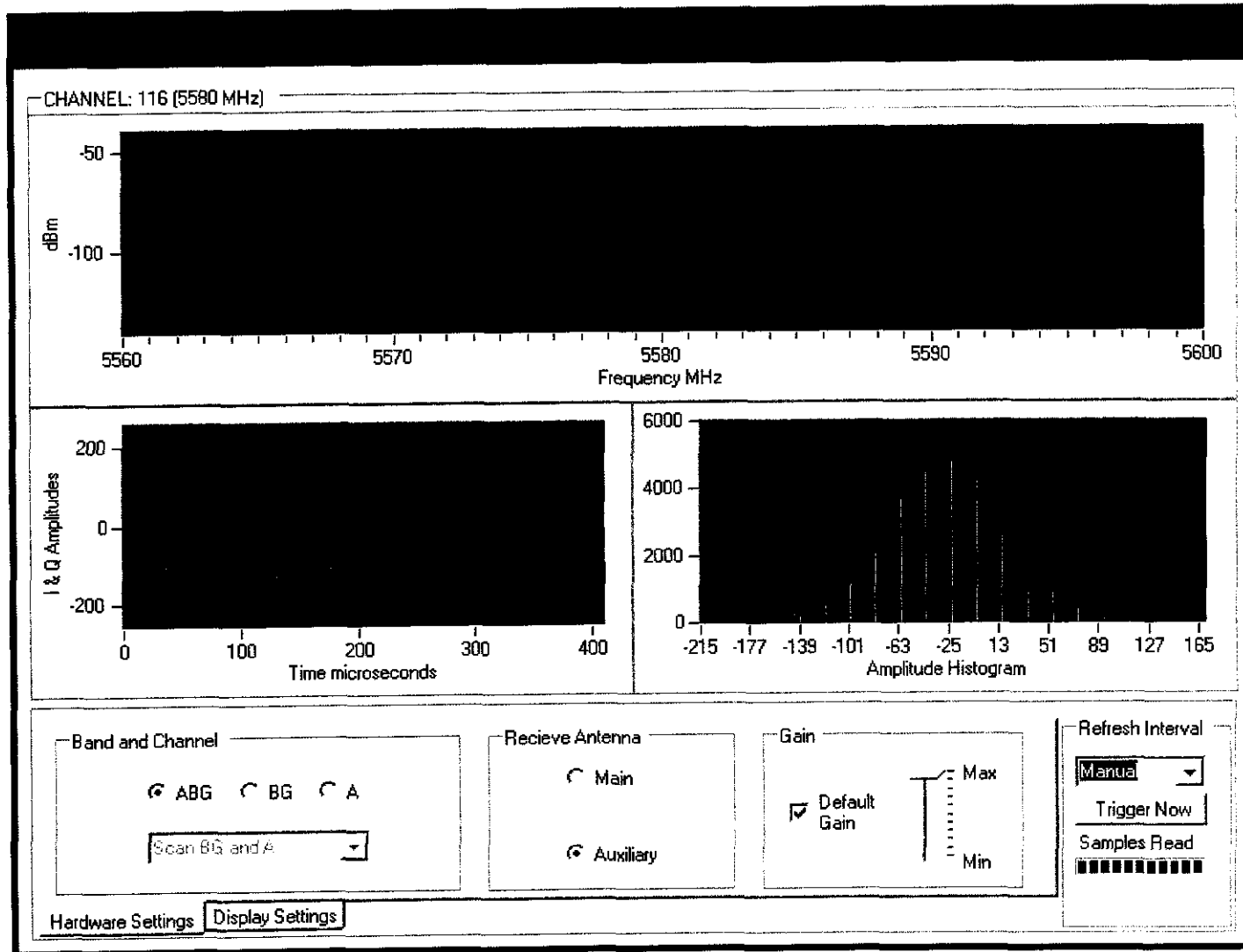
Overview/Intel Position

- Supportive of FCC proceeding
- Significant channel availability (“white space”)
- Demonstrated channel sensing
- No rebuttal of Intel’s technical approaches in Reply Comments
- FCC should move forward without delay

Vacant TV Channel Detection/Sensing

- Channel sensing demonstrated by Shared Spectrum (and advertised by Shure as built into their products)
- Channel availability demonstrated by Decisionmark
- Spectrum analyzer integration into low cost radio receiver silicon accomplished by several companies
- Detection threshold needs to be adjusted to -122 dBm to reflect Grade B level of 48 dBu to conform to new 47 CFR § 73.625(a)(1) regulations
 - Decisionmark study confirms -129 dBm is far too conservative

Example of Spectrum Analysis Integrated Into Wireless Chipsets



TV Reception: No Direct Pickup Interference

- Evidence – No DPU interference experienced due to:
 - Field strength > 100 mV/m within 4 miles of 1 MW transmitter (from ITU curves w/ 6 dB allowance for building penetration)
 - Field strength > 1 V/m within 5 m of mobile phone at 1 watt
 - 400,000 wireless microphones currently operating
- Conclusion
 - Susceptibility threshold of 100 mV/m is far too conservative (Intel recommends 350 mV/m)
 - Field strength limit of 350 mV/m at 5 m from unlicensed device at 100 mW is reasonable

TV Reception

- Cable ingress is not an issue
 - CATV interference raised by NAB requires use of obsolete cable
 - DBS downlink interference is mitigated by frequency separation
- NAB far overstates out-of-band emissions issue
 - Assumes highly unrealistic “worst-case” emission levels
 - Ignores that most homes are filled with devices subject to same emission levels

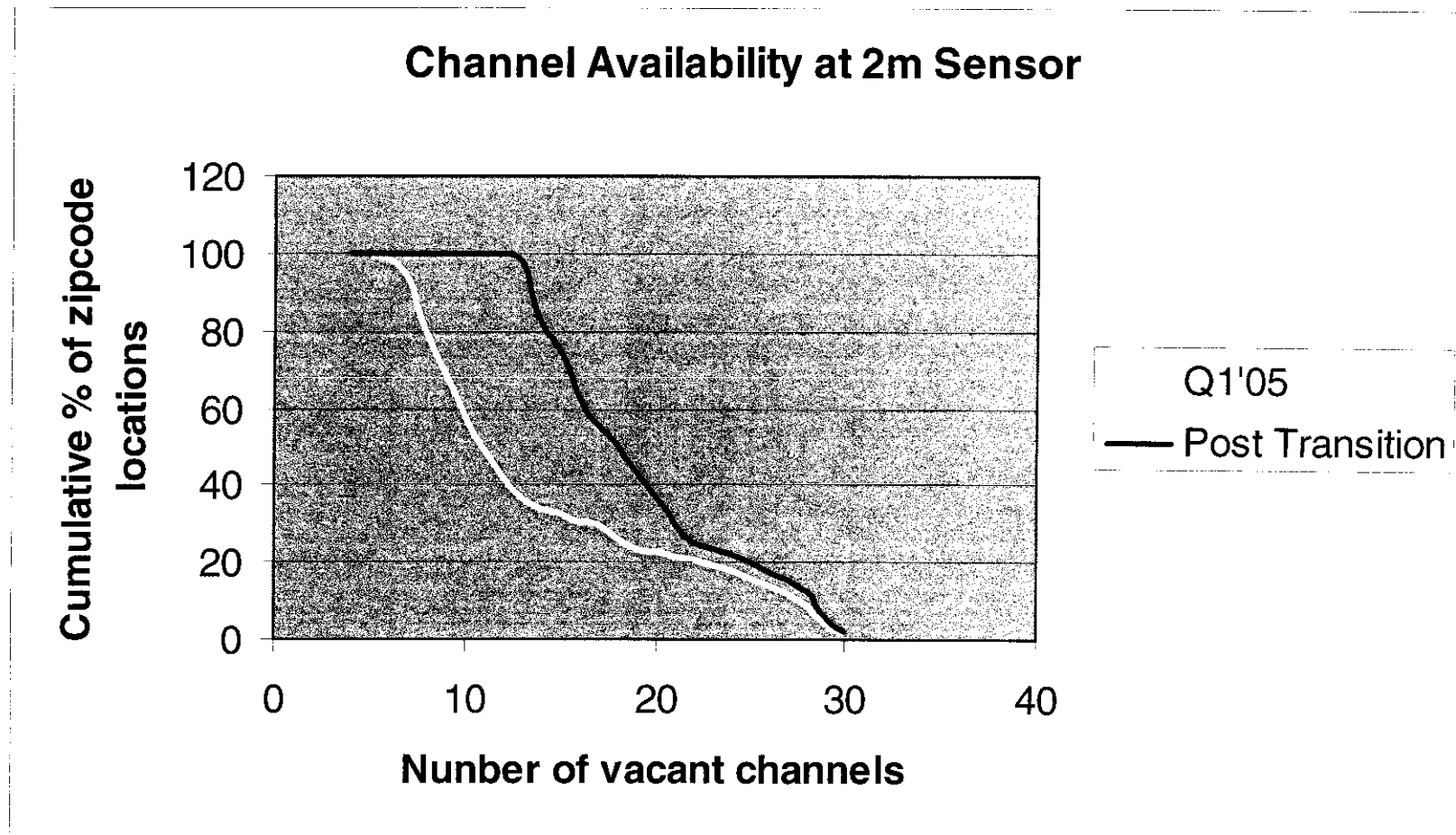
Wireless Microphone Operation

- Most wireless microphones operate on unlicensed basis and thus are not entitled to secondary protected status
 - Current system is broken
 - ~ 400,000 wireless microphones in use vs. ~25,000 licenses
 - <http://www.prosoundweb.com/lsi/gary/stealth.php>
 - Beacon system is acceptable only if new viable regime is created to enforce compliance and limit beacon use to Part 74.801 licensees
 - Unlicensed wireless microphones must operate on non interfering basis with licensed services
 - Beacon sensing must apply to all unlicensed devices (including unlicensed wireless microphones)
 - FCC should not allocate a special channel for wireless microphone use

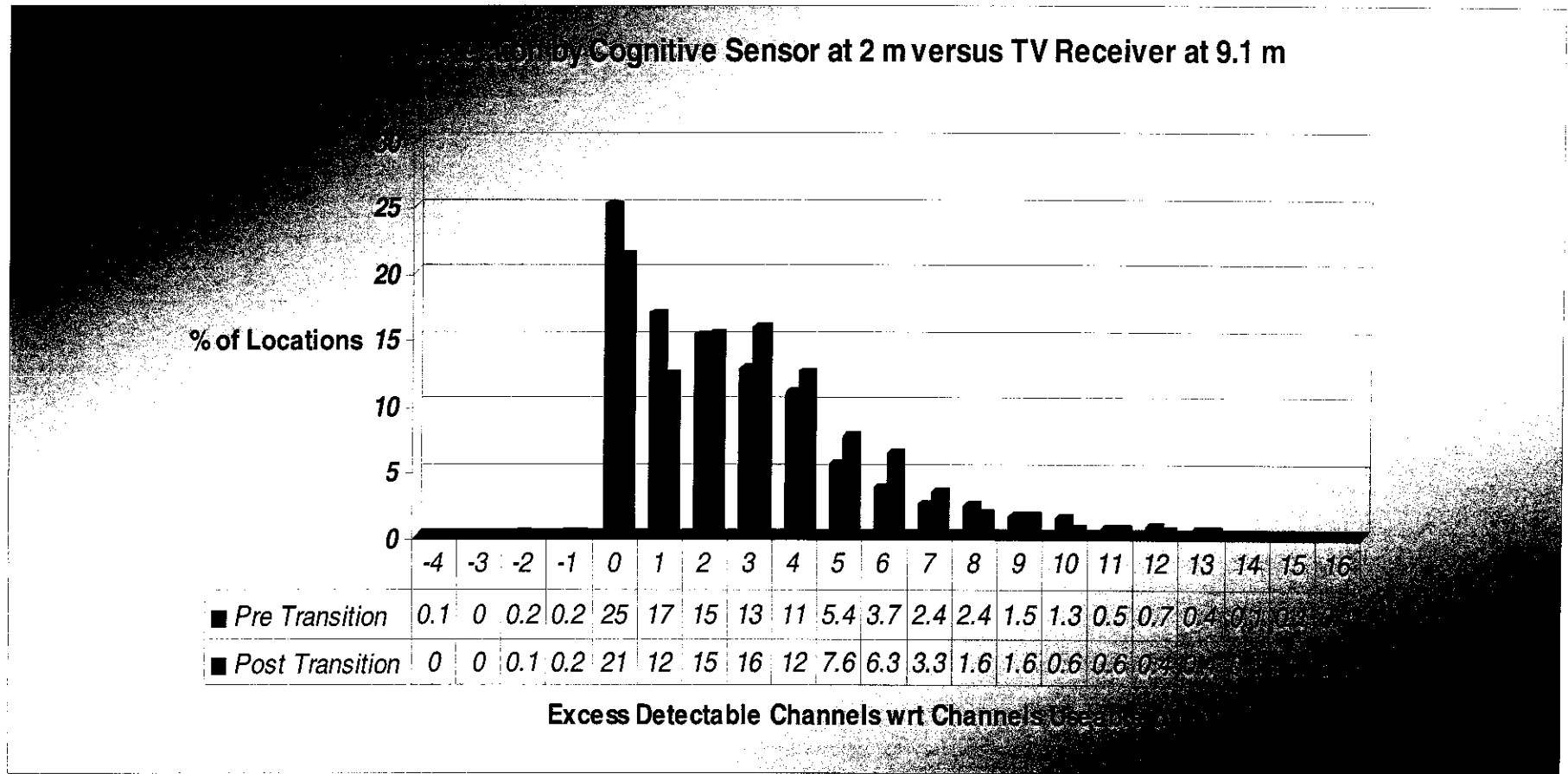
Headend/Translator Operation

- Protection only within Grade B contour
- Protection at remote locations beyond Grade B contour is unnecessary
 - Difficult access for “personal/portable” devices
 - Coordination may be considered for “fixed/access” services
 - Onus on headend operators to ensure database accuracy
 - Alternative delivery means should be considered

Channel Availability for Los Angeles, Salt Lake City, and New York City



Channel Detection Safety Factor



Reference – Intel commissioned study by Decisionmark 3/15/05

Parameters for Decisionmark Analysis

- Run 1: Usable TV channels as determined by Grade B signal parameters and TV station allowed maximum ERP and antenna heights
 - Antenna gain 10 dB, antenna height 9 meters, detection threshold -83 dBm
- Run 2: TV channels detected by unlicensed device
 - Antenna gain 10 db, antenna height 2 meters, detection threshold -102 dBm (FCC threshold -129dBm +10db for antenna + 11 dB for pilot tone + 6dB for outdoor environment)
- Run 3: TV channels detected by unlicensed device sensitivity analysis
 - Antenna gain 10 db, antenna height 2 meters, detection threshold -90 (or -96) dBm (depending on results of Runs 1 and 2)

Next Steps

- What are the FCC's concerns?
 - Outstanding technical issues
 - Modifications to proposed rules
 - Types of service
- Timeframe for R&O
 - “Fixed/access” and “personal/portable” devices in one item
- What can Intel do to help ?

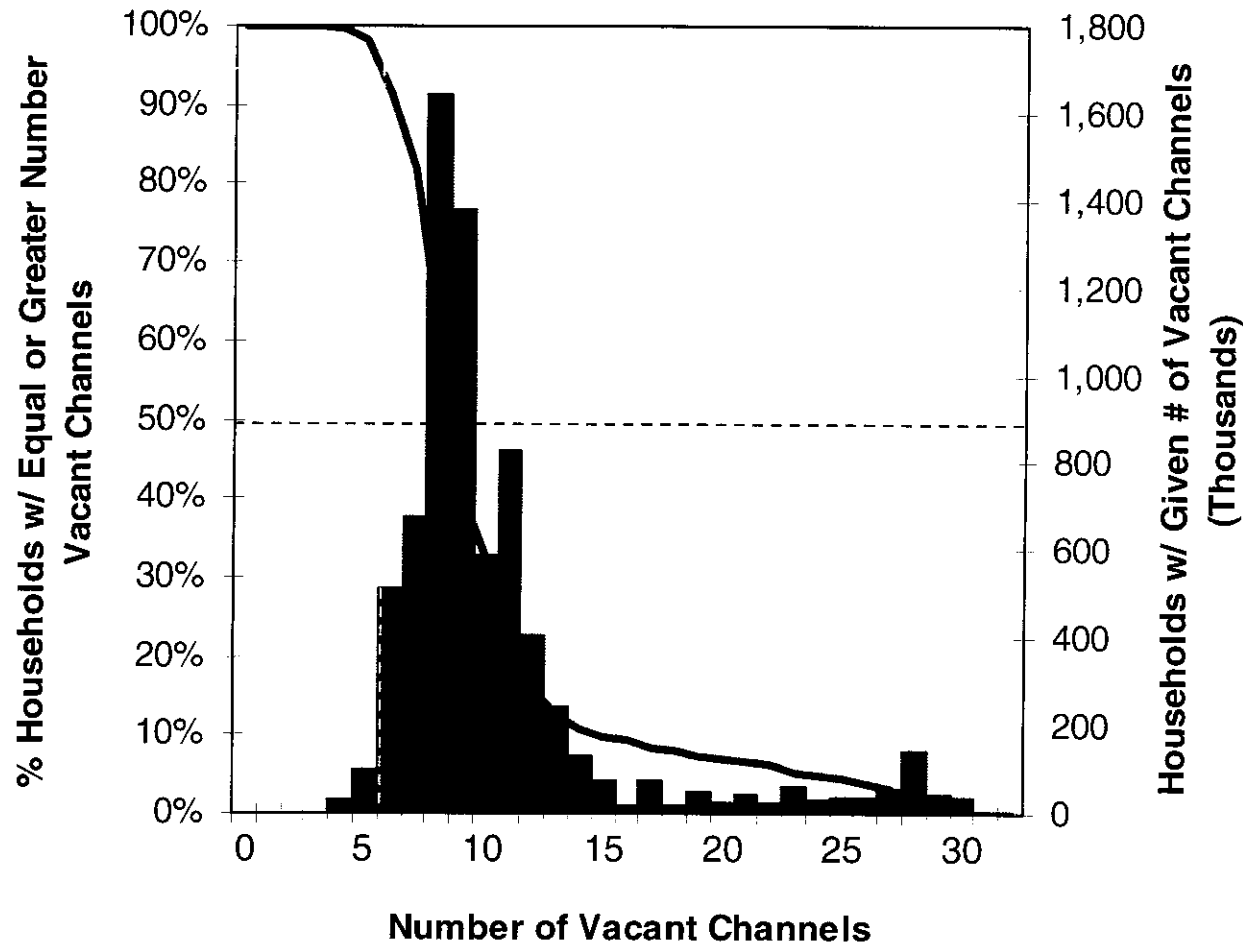
Back Up

Decisionmark Study

3/15/05

UHF Channel Vacancy Analysis

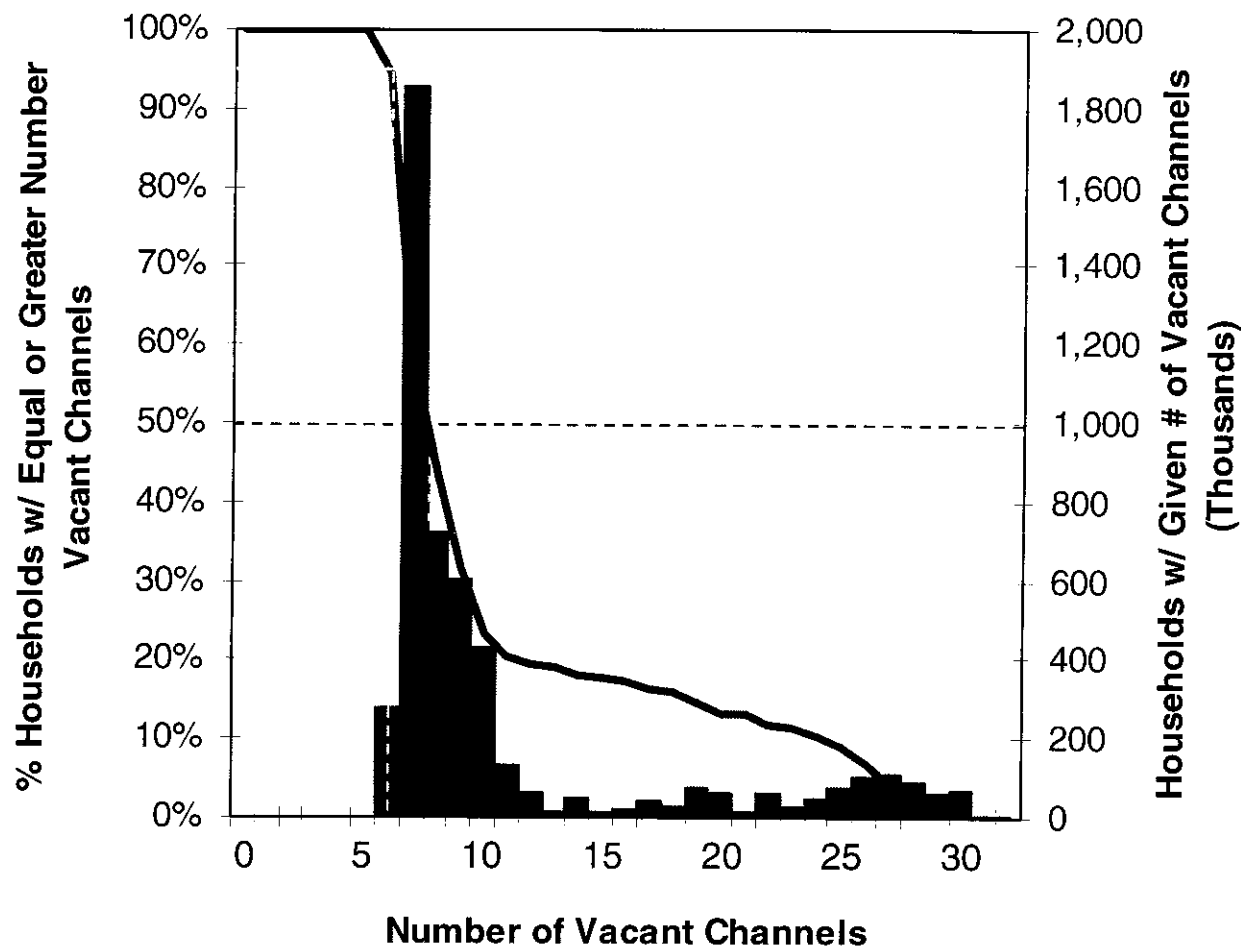
NYC Household Addressability (using Q1 2005 data)



95% of NYC households have greater than 5 channels today
Median HH channel vacancy is between 8 and 9 channels

UHF Channel Vacancy Analysis

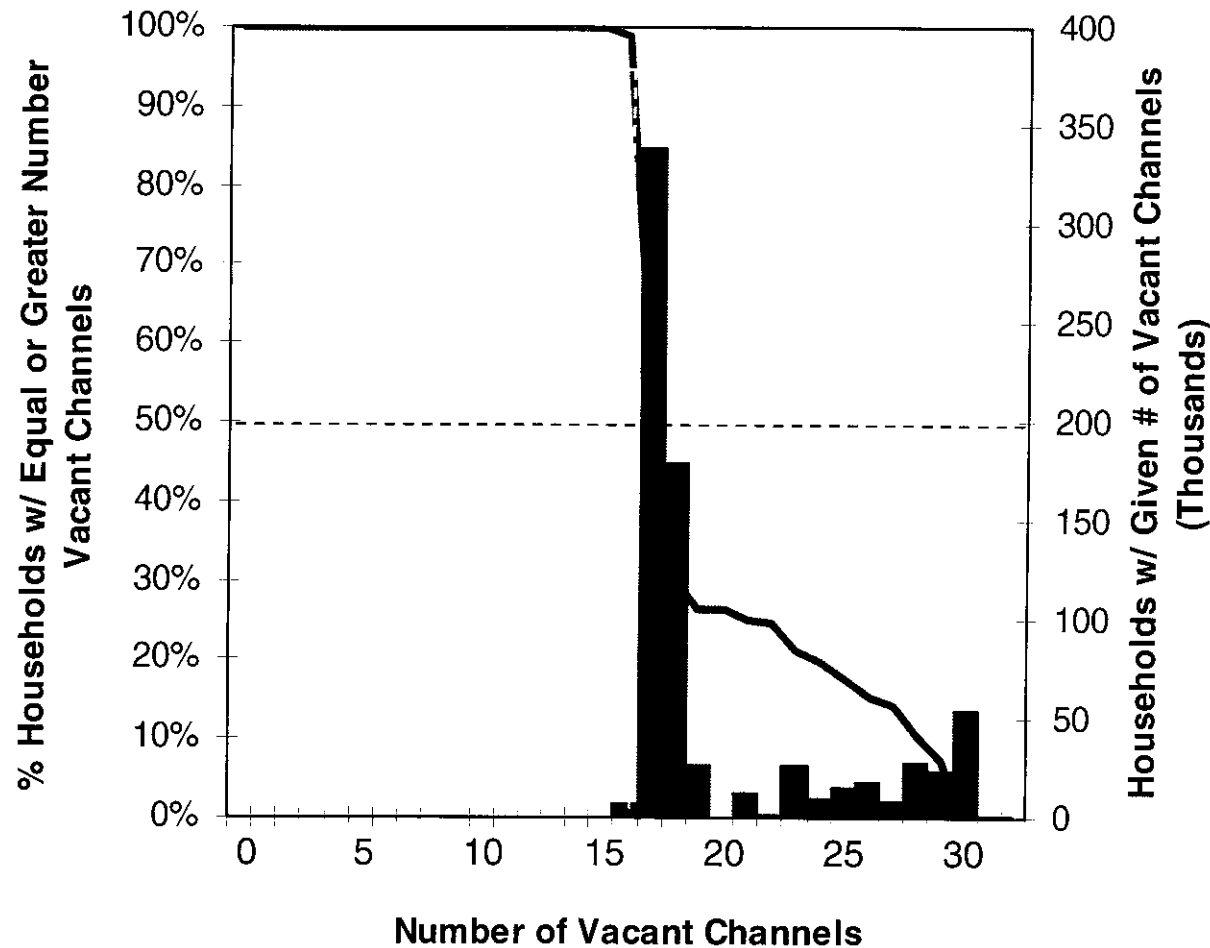
LA Household Addressability (using Q1 2005 data)



95% of LA households have 6 or more channels today
Median HH channel vacancy is between 7 and 8 channels

UHF Channel Vacancy Analysis

Salt Lake City Household Addressability (using Q1 2005 data)



95% of SLC households have greater than 15 channels today
Tight distribution: Median HH channel vacancy is 17 channels